

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/985,853
Attorney Docket No.: Q67063

REMARKS

Claims 1-14 are all the claims pending in the application. By this Amendment, Applicant editorially amends claims 1-3, 6-10, 13, and 14. The amendments to claims 1-3, 6-10, 13, and 14 were made for reasons of precision of language and consistency, and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents. The amendments to claims 1-3, 6-10, 13, and 14 were not made for reasons of patentability.

Preliminary Matters

Applicant thanks the Examiner for returning the completely initialed PTO/SB/08 for the Information Disclosure Statement filed on January 8, 2004.

Applicant notes that the Examiner returned only partially initialed PTO/SB/08 for the Information Disclosure Statement filed on January 28, 2002. That is, the Examiner did not initialize two of the references cited by the Applicant (cited in the "Other Prior Art" section: "NAKAMIZO, "Signal Analysis and System Identification" and "SUGAMURA et al., "Speech Data Compression by LSP Speech Analysis-Synthesis Technique"), because, as alleged by the Examiner, Applicant did not provide a concise explanation of the relevance of the cited references (*see* page 2 of the Office Action). Applicant respectfully disagrees.

The Examiner should initial these two references because the concise explanation requirement for foreign references under 37 C.F.R. § 1.98(a)(3) has been satisfied. In particular, a concise explanation "may be either separate from the specification or incorporated therein with the page(s) and lines of the specification where it is incorporated being noted" MPEP § 609 (page 600-122). It is noted that in the Information Disclosure Statement filed on January 28,

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2002, Applicant explicitly indicated that these references were discussed within the specification beginning at page 10, line 4 and page 11, line 1, respectively. This discussion in the specification, serves as a concise explanation of relevance, as indicated on page 2 of the Information Disclosure Statement filed January 28, 2002. Therefore, Applicant's duty of concise explanation has also been satisfied. It is thus appropriate and necessary for the Examiner to initial all references listed on form PTO/SB/08 submitted with the Information Disclosure Statement of January 28, 2002. For Examiner's convenience, a copy of the form PTO/SB/08 as filed on January 28, 2002 is enclosed.

Claim Objections

The Examiner objected to claim 13 because of a minor informality. Applicant has revised the claim, and respectfully submits that claim 13 as now presented no longer include the potential informality mentioned by the Examiner. Applicant therefore respectfully requests the Examiner to withdraw the objection to the claim 13.

Claim Rejections under 35 U.S.C. § 112

Claims 1, 6, 8 and 13 are rejected under 35 U.S.C. § 112, second paragraph. The Examiner's pointing out with particularity the aspects of the claim thought to be indefinite is gratefully noted. It is appropriate and necessary for the Examiner to withdraw this rejection in view of the self-explanatory claim amendment being made herein.

Claim Rejections under 35 U.S.C. § 103

Claims 1, 3-5, 8, and 10-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0052738 to Paksoy et al. (hereinafter "Paksoy"). Applicant respectfully traverses this rejection in view of the following comments.

Of these claims, only claims 1 and 8 are independent, the other rejected claims being dependent. This response focuses initially on the independent claims 1 and 8. Claim 1 recites a unique combination of features, including “a smoothing circuit responsive to the spectral parameters and the excitation signal, for smoothing at least one of the spectral parameters and the level of the excitation signal, so as to output the spectral parameters and the excitation signal.” The Examiner alleges that claim 1 is a speech decoder and is obvious over Paksoy.

Specifically, the Examiner alleges that the spectral parameter calculating circuit and the smoothing circuit as set forth in claim 1 are equivalent to the Paksoy’s disclosure of highband LP scale factor decoding and quantizesing (step 6) and the highband smoothing (step 8), respectively (*see* page 4 of the Office Action). In addition, the Examiner alleges that outputting both the spectral parameters and the excitation signal is a matter of design choice (*see* page 5 of the Office Action). Applicant has carefully studied Paksoy’s disclosure of decoding a signal, and Applicant respectfully submits that Paksoy fails to teach or suggest at least the smoothing circuit as set forth in claim 1.

In general, Paksoy relates to having a wideband speech coding system and a method capable of capturing the quality of wideband speech at low bit rates and of embedding the voiceband coding in the wideband coding to allow for decoding bit rate choice (§ 13). Paksoy discloses providing a low-bit-rate wideband embedded speech coding/decoding by use of a partition of the wideband into a lowband with narrowband coding plus a highband with LP coding using an adaptively smoothed modulated noise excitation where the modulation and smoothing derive from the lowband. The bits from the lowband and highband are combined for transmission or storage. The narrowband coding may be an LP-based voiceband coder. The

highband coding may include spectral reversal so it can effectively use the voiceband coder's quantizer (*see* Abstract, ¶¶ 11 and 12).

Specifically, with respect to decoding, Paksoy discloses at step 6, extracting the highband code bits, decoding the quantized highband LP coefficients (derived from hbd(m)) and quantizing normalized excitation energy level (scale factor). Frequency reverse the LP coefficients (alternate sign reversals) to have the filter coefficients for an estimate of hbdr(m) (¶ 67). Next, at step 7, the absolute value of the lowband code bits are scaled by the scale factor decoded in step 6 (¶ 68). At step 8, Paksoy further discloses defining the smoothed pitch-modulating waveform for the current frame, using the smoothing factor determined in step 5 (¶ 69). Next, at step 9, white noise is generated and the waveform is modulated to form the highband excitation (¶¶ 70 and 71). Finally, at step 10, the highband signal is synthesized using the frequency-reversed highband LP coefficients from step 6 together with the adaptively smoothed modulated scaled noise from step 9 as the excitation (¶ 72). The decoding process is also depicted in Fig. 1c of Paksoy.

The Examiner appears to equate the spectral parameter calculating circuit and the smoothing circuit set forth in claim 1 with the decoding steps 6 and 8 of Paksoy, respectively (*see* page 4 of the Office Action). In Paksoy, however, the LP coefficients are not applied to the smoothing of the waveform in step 8. That is, Paksoy discloses that the LP coefficients are extracted from the highband code bits and are applied to scale lowband coding bits, whereas for defining the smoothed waveform, the smoothing factor computed in step 5 is used. In other words, Paksoy discloses smoothing the waveform based on the smoothing factor determined by comparing the signal level with lowband coding bits and not based on the LP coefficients.

In short, if, as alleged by the Examiner, the LP coefficients (disclosed in step 6) are equivalent to the calculating of the spectral parameters as set forth in claim 1, then Paksoy fails to teach or suggest the smoothing circuit being responsive to the spectral parameters and the excitation signal. Paksoy discloses smoothing the waveform using only the calculated smoothing factor α . In Paksoy, the LP coefficients are only used in step 10 to synthesize highband signal.

Moreover, the Examiner alleges that having the smoothing circuit output both the spectral parameters and the excitation signal is an obvious design choice (see page 5 of the Office Action). That is, it appears that the Examiner alleges that whether the spectral parameters are fed directly to the synthesis filter or via the smoothing circuit is a matter of design choice. The Examiner's attention is directed to MPEP § 2144.04 which suggests that an omission of an element and its function is obvious if the function of the element is not desired. In addition, *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) reversed the rejection "because the examiner has used the wrong standard of obviousness" when asserting that the differences of the invention over the prior art were "well within the ordinary skill of the art"; *see also* MPEP § 2143.01 ("fact that the claimed invention is within the capabilities of one of ordinary skill in the art *is not sufficient by itself to establish prima facie obviousness.*")

In the present case, claim 1 recites: "a smoothing circuit...for smoothing in time at least one of the spectral parameters and the level of excitation signal." In other words, the smoothing circuit is adapted to smooth both the spectral parameters and the level of excitation, and at each time smoothes one of these two values. Accordingly, at one point in time the smoothing circuit smoothes the excitation signal and at another point in time the smoothing circuit smoothes the

spectral parameters. That is, the spectral parameters of Paksoy are passed through the smoothing circuit so that they can be smoothed when the excitation signal is not smoothed. Paksoy fails to teach or suggest smoothing at least one of the pitch-modulated waveform and at another time the smoothing factor or the LP coefficients. In fact, Paksoy does not teach or suggest smoothing anything else but the waveform.

As demonstrated above, additional changes besides those stemming from the references are needed to arrive at the invention claimed. The Examiner's Action attempts to circumvent the burden of accounting for these additional differences by labeling them "a matter of obvious design choice." However, such a label cannot substitute for actual factual, evidentiary support. Any invention could be rendered unpatentable under such a method of analysis which simply invokes a conclusory label.

Therefore, "a smoothing circuit responsive to the spectral parameters and the excitation signal, for smoothing at least one of the spectral parameters and the level of the excitation signal, so as to output the spectral parameters and the excitation signal," as set forth in claim 1 is not suggested by Paksoy, which lacks having the smoothing circuit receive the excitation signal and the spectral parameters and which further lacks smoothing one of the two and outputting both the spectral parameters and the excitation signal. For at least these exemplary reasons, Applicant respectfully submits that claim 1 is patentable over Paksoy. Therefore, Applicant respectfully requests the Examiner to withdraw this rejection of claim 1. Claims 3-5 are patentable at least by virtue of their dependency on claim 1.

Claim 8 recites features similar to the features argued above with respect to claims 1. Since claim 8 contains features that are similar to the features argued above with respect to claim

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1, those arguments are respectfully submitted to apply with equal force here. For at least substantially the same reasons, therefore, Applicants respectfully request the Examiner to withdraw this rejection of independent claim 8 and its respective dependent claims 10-12.

Claims 2 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Paksoy in view of U.S. Patent No. 5,732,389 to Kroon et al. (hereinafter "Kroon"). Applicant respectfully traverses in view of the following comments.

Claims 2 and 9 depend on claims 1 and 8, respectively. Applicant has already demonstrated that Paksoy does not teach or suggest all of the unique features of claims 1 and 8. Kroon is being cited only for its teachings of inverse-filtering and does not cure the deficient teachings of Paksoy. Kroon fails to teach or suggest the smoothing circuit as set forth in claim 1. Therefore, claims 1 and 8 are patentable over the combined teachings of Paksoy and Kroon. Claims 2 and 9 are patentable at least by virtue of their dependency on claims 1 and 8, respectively.

Allowable Subject Matter

The Examiner has indicated claims 6, 7, 13, and 14 would be allowable if amended to overcome the rejections under 35 U.S.C. § 112, second paragraph. Claims 7 and 14 are objected to as being dependent upon a rejected base claim. Applicant respectfully submits that claims 6 and 13 have been amended to overcome the 112 rejection. Therefore, it is appropriate and necessary for the Examiner to allow claims 6, 7, 13, and 14.

Applicant does not acquiesce to any inferences or presumptions drawn from the Examiner's statement regarding the reasons for allowance.

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Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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